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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/714,907 | 11/18/2003 | Patrick Duvaut | 060707-1510 | 3987 |

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| EXAMINER |
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ZISKIND, ANNA Y

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| ART UNIT | PAPER NUMBER |
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2611

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 12/29/2006 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

88

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/714,907 | Applicant(s) DUVAUT ET AL. | |
| | Examiner Anna Ziskind | Art Unit 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☒ Claim(s) 2 and 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>8/23/04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Ginis et al.</u> |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 8/23/04 was considered and made of record by the examiner. The Song et al. reference was not considered because the copy provided had text cut off on the right side margin.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method for selecting a spectral mask, as claimed in claim 1, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because the first sentence of the abstract refers to "all of the aforementioned problems," which lacks antecedent basis. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claim 4 is objected to because of the following informalities: the last word in the claim is misspelled and should be corrected to say –selected–. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ginis et al., "Vectored Transmission for Digital Subscriber Line Systems," IEEE Journal on Selected Areas in Communications, Vol. 20, No. 5, June 2002, pgs. 1085-1104.

As to claim 1, Ginis teaches a method of upstream/downstream frequency selection that includes obtaining weights for upstream and downstream rates (Pg. 1095, Eqn. 54, $\alpha_{k, up}$ and $\alpha_{k, down}$) and calculating a cost function (Pg. 1095, Eqn. 54) based in part on the weights. Next, Ginis teaches that the cost function of Eqn. 54 is used for upstream/downstream frequency selection, which is spectral mask selection (Pg. 1095, first two paragraphs of section C). However, Ginis does not explicitly teach comparing the cost function to a predetermined value. Because the cost function taught by Ginis

maximizes the weighted combination of possible upstream and downstream rates, the calculation of the maximum cost function involves the comparisons among function results using different possible upstream and downstream rates. The maximum cost function will be greater than the functions using all other rates, any one of which may be interpreted as a predetermined value. Therefore, it would have been obvious to one of ordinary skill in the art to determine whether a cost function is greater than a predetermined value, as doing so will result in selecting the maximum cost function, as taught in Ginis. If there is a small number of possible upstream and downstream rates, the comparison of resulting cost functions to find the maximum would be a fast and simple way of achieving the result taught by Ginis.

As to claim 3, Ginis teaches a cost function that maximizes a sum of optimal upstream and downstream rates (Pg. 1095, first two paragraphs of section C). Another way to express this relation is by showing that the difference between the maximum function and any of the other functions using non-optimal upstream and downstream rates is greater than zero. The cost function difference expressed in this way would be compared to zero in order to show that the maximum function using the optimal rates is greater than any of the other non-maximum functions using any other combination of suboptimal rates. Therefore, it would have been obvious to one of ordinary skill in the art to express the maximized cost function taught by Ginis by such a difference and compare

it to zero. If there is a small number of possible upstream and downstream rates, the subtraction of possible cost functions from one another is a fast and simple way of comparing them to each other and arriving at the maximum cost function.

Allowable Subject Matter

Claims 2 and 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 4 must also be corrected to overcome the outstanding objection.

The following is a statement of reasons for the indication of allowable subject matter. A search of prior art failed to teach, either alone or in obvious combination, a method for selecting a spectral mask that includes determining a cost function according to the relation recited in claim 2.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Ziskind whose telephone number is (571) 272-2769. The examiner can normally be reached on Mon. - Fri., 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anna Ziskind
Examiner
Art Unit 2611



CHIEH M. FAN
SUPERVISORY PATENT EXAMINER